



Data Standardization Policies and Procedures

Version 1.0

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FEDERAL STUDENT AID™

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Document History

Change Number	Date (m-d-y)	Paragraph, Number of Table or Figure	A* M D	Brief Description	Author	Change Request Number
1.0	05/30/07			Final draft		

Purpose

The purpose of this document is to describe policies and procedures for data standardization and data exchange in Federal Student Aid. The goals of data standardization and exchange are to:

- Implement data administration in ways that provide clear, consistent, unambiguous, and easily accessible data throughout Federal Student Aid.
- Standardize and register data elements to meet the requirements for data sharing and interoperability among information systems throughout Federal Student Aid.
- Promote standardization in Federal Student Aid consistent with requirements for sharing data among business owners, with other Federal agencies, and with the non-Federal community.
- Minimize the cost and time required to transform, translate, or research data elements that are named or described differently in different systems but that are actually the same data elements.
- Incorporate applicable Federal and national standards before creating Federal Student Aid standards or using common commercial best practices.
- Apply existing PESC XML standards and guidelines, as well as the standardized components and products resulting from their use, such as, namespaces, schemas, elements, attributes, and data types.

Background

Federal Student Aid has embarked on a major business and systems reengineering effort to create an integrated suite of solutions called the Data Strategy Initiative. As part of that effort, Federal Student Aid has created a high-level business view of its Target State Vision (TSV).¹

The Data Strategy Initiative was crafted in part to deliver overall improvements in the areas of data quality and data consistency. The initiative focuses on streamlining and integrating systems to ensure that accurate and consistent data is exchanged between institutions, their partners, and the internal systems that receive information from external systems. Federal Student Aid is leveraging the initiative to support the following program-wide business objectives:

- Reduce redundant data storage.
- Improve customer service.
- Increase accuracy of analytics.
- Increase efficiency in data handling.
- Reduce costs.
- Maintain a clean audit.

¹ From U.S. Department of Education, Federal Student Aid SOW for *Enterprise Data Management - Operations*

1.0 Overview

1.1 Introduction

Data is a vital resource for Federal Student Aid. Like any other resource, data must be managed effectively to deliver its full benefit. This document describes data element standardization procedures to deliver that benefit for Federal Student Aid.

1.2 Scope

The scope of this document is to provide overviews of Data Standardization Procedures and of conceptual, logical and physical data models. The standards described in this document apply to the data managed by Federal Student Aid and exchanged with its business partners. It also applies to internal systems (such as student financial aid, admissions, and registration) that receive information from external systems in support of Federal Student Aid's business processes.

1.3 Intended Audience

This document is intended for business managers, implementers, and XML Schema developers. The business manager audience includes purchasing officers (POs), sponsors, champions of business cases, the Chief Information Officer (CIO), subject matter experts, and in-house consultants. The implementer audience includes business project managers, project leaders, business case preparers, and IT project staff.

1.4 Organization of the Document

This document is divided into the following sections:

Section 1: Overview describes the document's high-level purpose, scope, intended audience, objectives, and benefits.

Section 2: Data Standardization Policy and Procedures describes the policies and procedures for standardization and exchanges to support Federal Student Aid.

Section 3: Standardization Standards and Guidelines Overview gives an overview of standards and guidelines for data element naming and definitions, data model entities and attributes, and more common data structures that will be needed for XML schemas.

Appendices include Letter of Intent and PESC Technical Advisory Board Action Request Form

1.5 Standardization Objectives

The main objectives of Federal Student Aid data standardization and exchange are to:

- Provide steps for the development and/or modification of newly-identified data schemas and XML schemas. In addition to prescribing format, data standards also establish a required level for correctness, consistency, and completeness of these data elements.
- Provide recommendations and instructions for the implementation of data standards.
- Use data found in Federal Student Aid data dictionaries and data models.

1.6 Standardization Benefits

The full benefits of data standardization will only be achieved if organizations use the same data element definitions and if those definitions are available for all business partners to search, retrieve, and use for message specification development. At Federal Student Aid, data standardization is supported through two main tools:

- **XML Registry and Repository** provides the education community with an application that can be used to store and retrieve common data element definitions and documents.
- **Enterprise Data Dictionary** maintained in ER/Studio serves seamless integration of data integration between Federal Student Aid systems.

Both support:

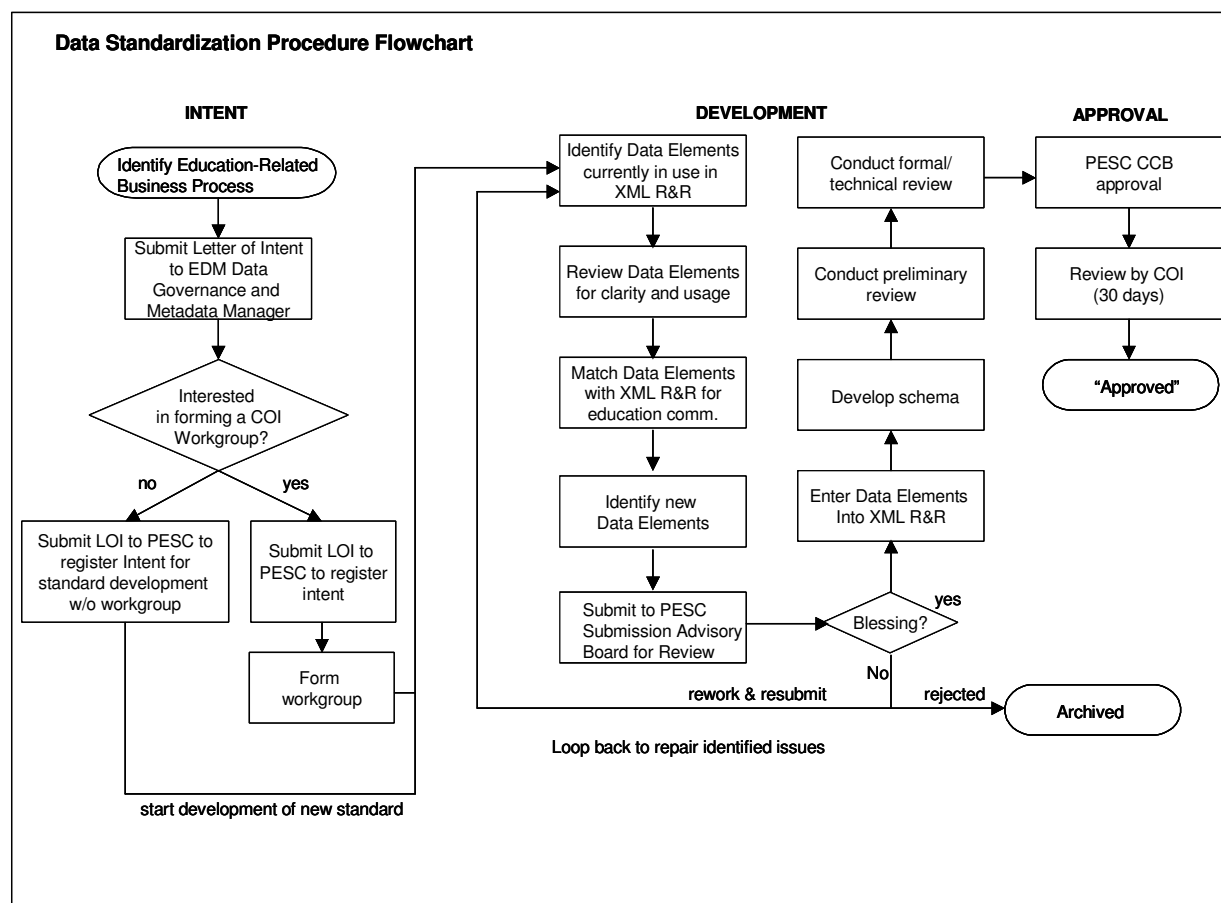
- **Data Sharing:** Facilitates data sharing within and between Federal Student Aid Business Owners and its partners where allowed and where mutually agreed upon.
- **Reliable Data:** Enterprise Data Standardization will allow Federal Student Aid personnel to be more productive and self-sufficient in their jobs by knowing where information is located, what the information looks like, and what the information means. This will eliminate the problem of redundant systems capturing the same data and then giving different answers to the same question.
- **Commonly Defined Data:** Enterprise-wide data definitions will replace individual systems' definitions. Application interoperability depends on standardization and standardization of data is only possible when data is defined and understood.
- **Elimination of Redundancy:** Because information can be duplicated multiple times across Federal Student Aid Business Areas, data standardization will not eliminate data redundancy. However, once data is defined and mapped, Federal Student Aid will be able to begin eliminating redundant data.
- **Integration of Operations:** The support of integrated operations among lines of business, communities of practice, and the facilitation of decision-making using standard data.

1.7 Standardization Policies and Procedures

This section gives an overview of procedures for establishing and adopting data standardization and exchange standards at Federal Student Aid. By using a structured process (outlined in Federal Student Aid Data Elements Standardization Procedures in section 3.2 and "PESC Policies and Procedures Manual, Standards Forum for Education.") Federal Student Aid gains the authority to set and maintain standards.

The procedures in this document have been established to facilitate the development and standardization of new data elements at Federal Student Aid. Data elements that are developed and standardized according to these procedures will be ready for review by the Federal Student Aid data element standardization approval process.

- **Intent:** Steps 1 + 2
- **Development:** Steps 3 – 11
- **Approval:** Steps 12 – 13



Placeholder for the content of the data policy.

2.2 Federal Student Aid Data Element Standardization Procedures

2.2.1 Step 1: Identify Education-Related Business Processes

Education-related business processes are sets of coordinated tasks and activities that Federal Student Aid performs during data modeling, in new development projects, and in analyzing functional requirements such as those required by new legislation. In this step, business users identify data requirements to support education-related business processes that accomplish specific Federal Student Aid goals.

2.2.2 Step 2: Contact EDM Data Governance and Metadata Manager

In this step, data element(s) proposed in Step 1 for standardization is submitted through EDM. The EDM Data Governance and Metadata Manager works collaboratively with the Development Project Manager to analyze and review candidate data elements and to ensure that each proposed data element supports a new education-related business process.

The EDM Data Governance and Metadata Manager submits a Letter of Intent to the Director of PESC announcing officially to PESC and the Education community the intent to develop a proposed data element standard. Appendix D contains a sample Letter of Intent.

If the proposed data standard is for XML interfaces that are shared with external partners, the Letter of Intent states this fact and requests the formation of a working group to assist with the standard development. The EDM Data Governance and Metadata Manager leads or co-chairs the group.

However, if the request results from a data migration project and the content of the data package cannot be changed, then the EDM Data Governance and Metadata Manager has a choice of collaborating with the Education community of interest in the standard development process, or to develop the standard without a working group. At this point, EDM Data Governance and Metadata Manager submits the Letter of Intent to PESC to register the intent indicating the request to form or not to form a COI Working Group for this effort.

Wherever possible, workgroups should re-use existing data elements without modification in order to minimize the number of data elements used across applications. The workgroups are also responsible for development and maintenance of standards assigned to them.

2.2.3 Step 3: Identify Data Elements Currently in Use in XML R&R

Before going through the development of a new data element, it is wise to have a complete understanding of the data requirement. In this step, the EDM Data Governance and Metadata Manager works with the development project team to facilitate and coordinate a review of data elements currently in use in the XML R&R. The review might determine that the data element already exists.

The full benefit of the data standardization is achieved, when the same data element definitions are available to and used by Federal Student Aid, organizations, and all partners in the Education community. The re-use of approved data elements can save considerable time and effort.

2.2.4 Step 4: Review Data Elements for Clarity and Usage

In this step, the EDM Data Governance and Metadata Manager reviews data elements in accordance with procedures for adherence to technical and functional requirements. S/he then forwards the data elements to the PESC Submission Advisory Board for submission as candidate data element. The EDM Data Governance and Metadata Manager also reviews each data element for completeness and conformance with current PESC standards, guidelines and policies, and ensures that it does not conflict with existing data elements.

2.2.5 Step 5: Match Data Elements with XML Registry and Repository of Education Community

In this step, the Development Project Manager/Team searches for matching data elements available in the XML Registry and Repository. The Education community develops the data definitions in compliance and guidance of PESC. The data definitions are standard definitions for key education-related data elements across the education domain.

The Development Project Manager/Team compares corresponding data elements in different systems to ensure that they are compatible. For each set of two or more corresponding data elements, there are three possibilities.

- Exact match: Re-use identified data element; close request.
- Close match: Document required modification and follow the procedures for modifying an existing data element; close this request.
- No match: A new data element is needed; follow the steps outlined in this process.

With the support of the EDM Data Governance and Metadata Manager, the Development Project Manager/Team will review the XML Registry and Repository to ensure the data element classifications listed in the XML R&R are compatible to support the identified education-related business processes. In addition, they will ensure that data elements are listed under the correct classifications.

2.2.6 Step 6: Identify New Data Elements

In this step, if a data element is not available to support an education-related process, a new data element must be established. Upon identifying the need for new data elements, the EDM Data Governance and Metadata Manager or team member of the working group fills out a PESC Technical Advisory Board Action Request form² and continues with Step 7. Appendix E contains a sample PESC Technical Advisory Board Action Request form.

The PESC Technical Advisory Board Action Request form has three parts:

- Requestor Information
- Description of the Request
- Summary of Technical Advisory Board Findings

² Core Components Submission Template

2.2.7 Step 7: Submit to PESC Submission Advisory Board for Review

In this step, the EDM Data Governance and Metadata Manager submit the proposed data element standard to the PESC Submission Advisory Board. The PESC Submission Advisory Board reviews and analyzes the request to determine whether the request form is filled out correctly.

Rejected submissions are returned to Federal Student Aid and/or the working group for resubmission along with an explanation of what is necessary to make the candidate data elements acceptable for further review and consideration. The working group and/or Federal Student Aid can respond to the rejections and resubmit the candidate data element(s) by repeating Steps 3-7.

2.2.8 Step 8: Enter Data Elements into XML R & R

In this step, if PESC accepts the submission request for the candidate data elements and notifies the EDM Data Governance and Metadata Manager, the new data elements are entered in the XML R&R with a status “submitted” and made available to the Education community³.

The data elements are available for all Federal Student Aid business partners, both internal and external, to search, retrieve, and use for schema development. Providing access to a baseline set of definitions for commonly-exchanged data helps ensure interoperability throughout the community.

2.2.9 Step 9: Develop Schema According to Business Rules and XML Technical Specification

In this step, Federal Student Aid develops XML schemas in accordance with industry ebXML standards⁴. The methodology provides a way to define the structure, content, and semantics of XML documents. It also ensures that technically correct XML elements in Federal Student Aid schemas comply with data standards and guidelines.

Elements and attributes in any XML document linked to a XML Schema must follow the defined structure to be valid. By using a particular ebXML Schema, software applications can exchange data with XML documents that conform to the schema. This ensures data validity and interoperability.

2.2.10 Step 10: Develop Implementation Guide

Uniform implementation among Federal Student Aid partners is vital. In this step, Federal Student Aid develops an Implementation Guide⁵ in compliance with PESC standards. The guide describes how the Education community data transaction sets should be implemented.

The recommended documentation standards for submissions by the development project teams should at least:

- Describe the business process that each specification is meant to address. Include use case descriptions and diagrams. Describe the overall process flow.

³ PESC Guidelines for XML Architecture and Data Modeling Version 3.0

⁴ Policies and Procedures Manual Version 1.0.0.

⁵ Implementation Guide Introduction

- Describe the roles and responsibilities of the trading partners in the context of applying and using each standard.
- Document the XML schemas used for each standard. Indicate each schema that is used, including the version of each.
- Document the XML instance documents used by each standard.
- Define the business and technical terms are used in each standard.
- Provide information about the standards submission document. This may include title, file name, previous version (when submitting a request for modification), editors, contributors, copyright statement, abstract, and document status.
- Include any relevant appendices. These should include the version history of the standards document and any related documents.

2.2.11 Step 11: Submit to PESC Change Control Board (CCB) for Approval

In this step, the CCB conducts a thorough review of the development workgroup submission to determine each candidate:

- Is approved
- Requires rework
- Is rejected

If clarification is needed, the CCB requests it. After the candidate review is satisfactorily completed, the Steering Committee notifies the PESC Board of Directors that it intends to issue the candidate for public comment. The expected timeframe for public comment is 30 calendar days. No candidate will be approved for further consideration until all minimum requirements have been satisfied.

Candidates that require rework will be returned to the submitting work group by the CCB for revision and resubmission. A revised candidate submission will repeat all previous steps.

Rejected candidates will be returned to the development workgroup with the reasons (but not sources) of rejection. At that time, the workgroup can respond to the cause(s) of rejection and resubmit the candidate submission without limitation. If the CCB approves a change in the underlying specification or standard, then the rejected candidate submission will be re-assessed under the new specification or standard.

2.2.12 Step 12: Announce Final Approval by PESC CCB

If the CCB receives no public comments during the 30-day review period, it recommends the data element for final approval. The data element's status changes to "approved" and the EDM Data Governance and Metadata Manager and/or the working group that submitted the data element are automatically notified. At this time, all necessary documents and communications will be published and posted for the community. The new standard and its supporting documentation shall be posted to the PESC Web site, placed in the XML Registry and Repository, and made available for use by the Education community.

3.0 Data Standardization Standards and Guidelines

Data standards are rules that govern the development and modification of the names, definitions, and other metadata for entities, tables, attributes, columns, and the data models in which they appear. In addition to prescribing the format, data standards also establish a required level for the correctness, consistency, and completeness of these data elements and data models.

Data modeling standards specify the level of detail required for particular types of data models. Logical data models are more detailed and complete than conceptual data models and have more applicable data standards and guidelines. The goal at the physical level is to encourage the development of one design for a single enterprise repository database residing on a shared platform.

Reference information about all standards and guidelines for data modeling can be found in the document titled “**Data Model Standards and Guidelines, Registration Policies and Procedures.**”

3.1 Conceptual, Logical, and Physical Data Model Overview

There are three levels of data models: conceptual, logical, and physical. This section explains the differences between them, the order in which they are created, and how to transition from one level to another.

3.2 Conceptual Data Model (CDM)

The conceptual data model includes all major entities and relationships. It does not contain detailed information about attributes and is often used in the initial planning phase.

Business requirements from various sources such as business documents, discussions with business area stakeholders, functional teams, business analysts, subject matter experts, and end users who do the reporting on the database, provide input to the CDM development. Data modelers create a CDM and give that model to the functional team and business area stakeholders for review.

3.2.1 Conceptual Data Model - Highlights

The CDM is the first step in constructing a data model in a top-down approach. It is a clear and accurate visual representation of the business of an organization. The CDM shows the overall structures and provides high-level information about the business subject areas or data structures of an organization. The CDM discussion starts with a main subject area of an organization and then all the major entities of each subject area are reviewed in detail.

In the CDM the relationships between the subject areas and the relationship between entities in subject areas are drawn using symbolic notation (IDEF1X or IE). In a data model, entities can have different types of relations with each other: one-to-one, one-to-many, many-to-one, or many-to-many. The CDM contains data structures that may not be implemented in the database.

In CDM discussions, technical as well as non-technical teams project their ideas for building a sound logical data model.

For example: Consider a bank that contains different lines of businesses such as savings, credit card, investment, and loans. The CDM contains major entities from savings, credit card, investment, and loans. Conceptual data modeling helps the functional and technical teams to understand how business requirements would be described in the logical data model (LDM).

3.2.2 Conceptual Data Model Summary

The features of the conceptual data model include:

- It includes the important entities and the relationships between them, grouped by subject area.
- No attribute is specified.
- No primary key information is specified.
- At this level, the data modeler attempts to identify the highest-level relationships among the different entities.

3.3 Logical Data Model (LDM)

As soon as the functional team accepts the conceptual data model, the functional team starts developing the LDM. The logical data model implements and extends the conceptual data model by fully-attributing all entities. It is the version of a data model that wholly or partially represents the business requirements of an organization and is developed before the physical data model. The LDM does not consider any technical requirements or restrictions introduced by the physical implementation.

The steps for designing the LDM are:

- Identify all entities.
- Specify primary keys for all entities.
- Find the relationships between different entities.
- Find all attributes for each entity.
- Find the properties and valid domain ranges for each attribute.
- Resolve many-to-many relationships.
- Normalize.

Once the LDM is completed, it is forwarded to the business area stakeholders and functional teams for review. A sound logical design clearly defines data structures and the relationships between them and validation. When creating the LDM consider the current and future business requirements. This thinking will allow LDM to support a growing the business without a major redesign. The LDM includes all required entities, attributes, key groups, and relationships that represent business information and define business rules.

3.3.1 Logical Data Model -- Summary

The LDM:

- Includes all entities and relationships between them.
- Specifies all attributes for each entity, including properties and domain ranges.
- Specifies the primary key for each entity.
- Specifies foreign keys (keys identifying the relationship between different entities).
- Normalizes data to third normal form.

At this level, the data model describes the data in as much detail as possible, without regard to how the data will be physically implemented in the database.

3.4 Physical Data Model (PDM)

As soon as the functional team approves the logical data model, work starts on development of the PDM. The transformation from a logical to a physical model includes imposing database rules, implementation of referential integrity, super types, and sub types.

Therefore, the PDM includes all required tables, columns, relationships, and database properties for the physical implementation of databases. Database performance, indexing strategy, data access path, physical storage, and denormalization are important parameters of a PDM. Once it is completed, it is then forwarded to technical teams (developer, group lead, DBA) for review and validation.

The steps for PDM design are:

- Convert entities into tables.
- Convert relationships into foreign keys.
- Convert attributes into columns.
- Modify the PDM based on physical constraints / requirements.

3.4.1 Physical Data Model - Summary

The physical data model:

- Specifies all tables and columns.
- Uses foreign keys to identify relationships between tables.
- Might de-normalize data depending on user requirements.
- Might be quite different from the logical data model.

The PDM specifies how the LDM will be realized in the physical database schema.

3.5 Relationship Between the Data Models and the Standards (XML)

The PESC XML R&R was created for the Education community. It was developed and is operated by the US Department of Education's Office of Federal Student Aid and is administered by PESC and Federal Student Aid. Federal Student Aid has adopted PESC Guidelines for XML Architecture and Data Modeling as its recommended syntax specification. This standard supports Federal Student Aid's schema development, producing technically correct XML elements that comply with PESC data standards and guidelines. Federal Student Aid, PESC, and the education standards community created and reviewed these documents through a collaborative effort. They represent agreement and acceptance of the community.

XML simplifies sharing of data and separates content from presentation. In the Education community, specifically in Federal Student Aid, XML improves shared interfaces with external partners and with new development projects.

XML schemas are designed to promote the re-use of data models. If a developer is working on an industry-specific XML application, he or she should use an existing industry-standard XML data model instead of creating a new one. The standardized XML data models were designed by consortia of industry experts who put considerable time and effort into data modeling.

For details about XML Standards and Guidelines, refer to the document titled "PESC Guidelines for XML Architecture and Data Modeling."

Appendix A. Glossary

The following terms are used in this document or are pertinent to its content.

Column: A set of data values of the same type collected and stored in the rows of a table.

Database: A set of table spaces and index spaces.

Data Element: A generic term for an entity/class, table, attribute, or column in a conceptual, logical, and physical data model.

Enterprise Conceptual Data Model (ECDM): One of the initial components of Enterprise Data Architecture. The first enterprise level data model developed. The ECDM identifies groupings of data important to Lines of Business, Conceptual Entities, and defines their general relationships. The ECDM provides a picture of the data the enterprise needs to conduct its business. (**Reference:** *U.S. Department of Education Enterprise Data Architecture – Enterprise Data Standards and Guidelines.*)

Enterprise Data Dictionary (EDD): One of the initial components of Enterprise Data Architecture. The EDD lists metadata objects and a complete description of the object at a sufficient level of detail to ensure that they are discrete and clearly understood. Such descriptions shall include, at a minimum, labels (names, titles, etc.) and definitions (or text descriptions), but may include additional descriptive metadata such as object type, classifications, content data type, rules (business, validation, etc.), valid and default values, etc. The EDD is the definitive source for the meaning of metadata objects. (**Reference:** *FSA-EDM*)

Enterprise Logical Data Model (ELDM): A component of a maturing Enterprise Data Architecture. The second enterprise level data model developed. It is the result of merging application level data model information into the existing Enterprise Conceptual Data Model (ECDM). The ELDM extends the ECDM level of detail. (**Reference:** *U.S. Department of Education Enterprise Data Architecture – Enterprise Data Standards and Guidelines.*)

eXtensible Markup Language (XML): A meta-markup language for describing data elements that is extensible because it does not have a fixed set of tags and elements.

Extensible Stylesheet Language (XSL): A standard from the W3C for describing a style sheet for XML documents.

Enterprise Data Standards and Guidelines (EDSG): A component of a maturing Enterprise Data Architecture. Rules and recommendations for the creation and updating of metadata objects and structures as well as for creating conceptual and physical models and schemas at both the enterprise and application level. (**Reference:** *FSA-EDM*)

Schema (XML): A definition, written in Extensible Markup Language (XML) syntax, of constraints for the content type and data type of XML tags.

Schema (Data): Any diagram or textual description of a structure for representing data. (**Reference:** *FSA-EDM*)

Table: A set of related columns and rows in a relational database.

Table Space: A portion of a database reserved for where a table will go. Table structure is the mapping of tables into table spaces.

Tag (XML): The markup portion of an Extensible Markup Language (XML) element surrounding the character data. The name of the tag reflects the content inside the XML element.

Valid (XML): A well-formed eXtensible Markup Language (XML) document that also matches the Document Type Definition (DTD).

Well-formed (XML): An eXtensible Markup Language (XML) document that has sufficiently specific grammar to be read and understood by an XML parser.

World Wide Web Consortium (W3C): An international industry consortium founded in 1994 to develop standards for the Web. The W3C has standardized many of the fundamental technologies of the Web, including HTML and XML, and others.

Appendix B. Abbreviations / Acronyms

The following abbreviations and acronyms are used herein or are pertinent to content included herein:

Abbreviation / Acronym	Applicable Term
CDM	Conceptual Data Model
ECDM	Enterprise Conceptual Data Model
ED	Department of Education
EDD	Enterprise Data Dictionary
EDM	Enterprise Data Management
EDSG	Enterprise Data Standards and Guidelines
ELDM	Enterprise Logical Data Model
FEA	Federal Enterprise Architecture
IT	Information Technology
ITSS	Information Technology System Services
LDM	Logical Data Model
PDM	Physical Data Model
PESC	Postsecondary Electronic Standards Council
XML	eXtensible Markup Language

Appendix C. References

The following sources contributed to the content included in this document:

Resources:

- PESC Guidelines for XML Architecture and Data Modeling (URL: <http://www.pesc.org/info/policies/PESC-Guidelines-for-XML-Architecture-and-Data-Modeling-v3-0.doc>)
- Core Component Submission Template (URL: <http://www.pesc.org/info/policies/CoreComponentSubmissionTemplate.xls>)
- Documents to accompany a standards submission (URL: http://www.pesc.org/info/policies/PESC-TAB-StandardSubmissionTemplate_20051116.doc)
- Department of Education Data Standards and Guidelines
- Briefing on the Assessment of Documentation Standards
- Policies and Procedures Manual, Standards forum for Education (URL: <http://www.pesc.org/info/policies/Manual-Finalv1-0-0.doc>)
- <http://www.1keydata.com/datawarehousing/data-modeling-levels.html>
- <http://www.learn-datamodeling.com>

Appendix D. Sample Letter of Intent

Submitter Name

Submitter Organization

Address

City, State Zip

Date

Re: Letter of Intent

Dear Michael Sessa,

I am pleased to submit this letter to notify PESC that the (Initiating Entity) intends to work collaboratively with the higher education community to develop the following standard _____.

A high-level description of the proposed standard is as follows:

Please see the attached Business Case which includes information but is not limited to: historical overview, justification, description of the planned collaboration, etc.

Finally, I have the following comments:

Sincerely,

PESC Technical Advisory Board Action Request	Request Number:
	Request Create Date
Requestor Information	
Submitting Organization:	
Requestor Name:	
Requestor Contact Information:	
Primary Phone:	
Secondary Phone:	
Primary email address:	
Secondary email address:	
Description of the Request	
Additional Documentation (Attached) Supporting the Request:	

Additional Information Supporting The Request Can Be Found At (indicate URLs):

Summary of Technical Advisory Board Findings

Additional Documentation (Attached) Supporting These Findings (indicate filenames):

Additional Information Supporting These Findings Can Be Found At (indicate URLs):

This Response was Prepared By:

Date Prepared: